

**County of Orange  
Health Care Agency**

**Orange County Birth Outcomes, 1998**



**September 2001**

*Prepared by:*

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September 2001

To our colleagues in public health,

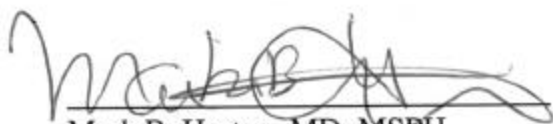
We are pleased to announce the availability of our statistical report, "Birth Outcomes, 1998." This information is compiled from birth, death, and fetal death certificates filed with the Birth and Death Registration Office of the County of Orange Health Care Agency, and is presented in a format similar to others previously published in what has become an annual series.

The information presented in this report can be considered to be the official data for 1998. Unless otherwise noted, reference is made to births and deaths *to Orange County residents*, regardless of where the event occurred. Similarly, births and deaths occurring within the county, but to residents of other jurisdictions, are *not* counted in this report. (The process of removing the records of persons and events outside the county, so that the data pertain only to county residents, is under the auspices of the State Department of Health Services Office of Vital Records, and accounts for the two-year lag in the release of official reports.)

The report is available at the Communicable Disease Control and Epidemiology web site, <http://www.oc.ca.gov/hca/public/cdcestat.htm>.

Thank you for your interest in this special report. We encourage you to make other interested colleagues aware of its publication. If you'd like more information, please call Communicable Disease Control and Epidemiology at (714) 834-8024.

Sincerely,

  
Mark B. Horton, MD, MSPH  
Deputy Agency Director/Health Officer  
Public Health Services

  
Juliette A. Poulson, RN, MN  
Agency Director

**County of Orange  
Health Care Agency**

**Birth Outcomes, 1998**

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**County of Orange  
Health Care Agency**

**Birth Outcomes, 1998**

**INTRODUCTION**

This document provides tabulations of vital statistics on births in the County of Orange, California, in 1998, as part of a historical series of similar annual reports. These data are compiled from information provided on birth, fetal death and death certificates filed with Birth and Death Registration Office in the County of Orange Health Care Agency.

This document is divided into eight sections based on the data presented. Section 1 presents birth and infant mortality rates. Section 2 presents statistics on complications and procedures performed during pregnancy and labor, in addition to abnormal conditions and clinical procedures relating to the newborn. Section 3 presents the number and rate of cesarean deliveries by Orange County hospital. Section 4 presents statistics related to the birth weight of the infant. Section 5 presents statistics related to when prenatal care was initiated. Section 6 presents statistics on payment source for prenatal care and delivery. Section 7 presents statistics on parental age, focusing on comparing father's age with mother's age. Section 8 compares the ethnicity of the mother with the ethnicity of the father.

The appendices provide additional information on the number of births by ethnicity of the mother, as well as population statistics from the California Department of Finance used to calculate rates. Appendix 3, Technical Notes, contains valuable information on a variety of issues related to the construction of the tables in this report, e.g. categorization of ethnicity, important definitions of terms used in this report, and calculation of rates and ratios.

The information presented can be considered official 1998 data. Official data for 1999 is not expected to be released until the Fall of 2001, followed by the release of official data for 2000 in Fall of 2002.

If you have questions or comments regarding the data presented, or for more information on birth statistics, please telephone County of Orange Health Care Agency, Communicable Disease Control and Epidemiology at (714) 834-8180.

Users are welcome to reproduce or quote this document in whole or in part provided that acknowledgement is given. Suggested citation: *County of Orange, California, Birth Outcomes, 1998*, County of Orange Health Care Agency, Santa Ana, California, September 2001.

**County of Orange  
Health Care Agency**

**Birth Outcomes, 1998**

**HIGHLIGHTS**

The number of births to Orange County residents in 1998 was 46,186, a decrease of 2.0% from the 47,132 births in 1997.

The fertility rate (number of births per 1,000 females aged 15-44) was 77.0, a decline of 1.4% from the rate of 78.1 in 1997. The fertility rate differed markedly among racial/ethnic groups:

- Hispanic 129.0
- Asian/Pacific Islander 60.9
- African American 56.4
- White 54.8
- American Indian 48.8

Teenagers (15 – 19 years old) gave birth to 3,696 infants, a rate of 45.8 per 1,000.

- Hispanic 107.6
- African American 37.2
- American Indian 24.6
- White 17.2
- Asian/Pacific Islander 11.7

Prenatal care was initiated in the first trimester in 85.3% of pregnancies that resulted in a live birth.

Cesarean sections were performed in 20.8% of births, essentially unchanged from 1997 when 20.3% of births were by C-section.

63.6% of mothers reported having had at least one ultrasound during the pregnancy. Electronic fetal monitoring was reported by 8.9% of mothers.

There were 2,539 infants of low birth weight (less than 2,500 grams), a rate of 55.0 per 1,000 live births, which is an increase from the rate of 52.9 in 1997.

The infant mortality rate in 1998 was 4.42, an increase of 0.7% from the 1997 infant mortality rate of 4.39.

**County of Orange**  
**Resident Births**  
**1998**

**Birth Outcome Summary**

	<b>Total</b>	<b>Male</b>	<b>Female</b>
<b>Total Live Births to Orange County Residents<sup>1</sup>:</b>	46,186	23,583	22,603
Estimated Population of Orange County <sup>2</sup>	2,763,900		
Crude Birth Rate per 1,000 Population	16.71		
<b>Total Live Births Occurring in Orange County:</b>			
(Including non-resident births, excluding resident births out of county):	48,866		
<b>Mean Age of Mother (Years):</b>	28.32		
<b>Fertility Rate:</b>			
Births to Mothers aged 15-44	46,058		
Estimated Population of Females aged 15-44	597,842		
Fertility Rate per 1,000 Females aged 15-44	77.04		
<b>Teen Birth Rate:</b>			
Births to Mothers aged 15-19	3,696		
Estimated Population of Females aged 15-19	80,679		
Teen Birth Rate per 1,000 Females aged 15-19	45.81		
Births to Mother aged 10-14	61		
Estimated Population of Females aged 10-14	88,625		
Teen Birth Rate per 1,000 Females aged 10-14	0.69		
<b>Infant Deaths<sup>3</sup>:</b>			
Infant Deaths (< 1 Year)	204		
Infant Mortality per 1,000 Live Births	4.42		
Neonatal Deaths (Less than 28 days)	144		
Neonatal Mortality Rate per 1,000 Live Births	3.12		
Post-Neonatal Deaths (28 days to < 1 Year)	60		
Post-Neonatal Mortality Rate per 1,000 Live Births	1.30		
<b>Fetal Deaths (death of fetus <math>\geq</math> 20 weeks of gestation):</b>			
Number	262		
Fetal Death Ratio per 1,000 Live Births	5.67		
<b>Maternal Deaths<sup>4</sup>:</b>			
Maternal Deaths	4		
Maternal Death Rate per 10,000 Live Births	0.87		

<sup>1</sup> Unless otherwise specified all numbers and rates are for births to Orange County residents, whether or not the birth occurred in Orange County.

<sup>2</sup> Populations based on July 1, 1998 population estimates from California Department of Finance.

<sup>3</sup> Birth certificates matched to death certificates.

<sup>4</sup> Maternal deaths based on 1998 Orange County death certificate data.



**County of Orange**  
**Resident Births**  
**1998**

**Birth Outcome Summary**

**Low Birth Weight Infants:**

Very Low Birth Weight (<1,500 g)	464
Rate of Very Low Birth Weight per 1,000 Live Births	10.05
Low Birthweight (< 2,500 g)	2,539
Rate of Low Birth Weight per 1,000 Live Births	54.97

**C-Section Deliveries:**

First C-Sections	5,836
Total C-Sections	9,595
% of Total Births	20.78%

**Out of Hospital Births:**

At Home	139
Other (In auto, in parking lot, etc.)	16
Total	155

**Live Births by Plurality:**

Singleton	44,953
Twin	1,130
Triplet	83
Quadruplet	20

## County of Orange

### Resident Births

1998

### Section 1. Birth & Infant Mortality Rates

#### Live Births & Birth Rates for Orange County Cities

City of Residence	Live Births	Population <sup>1</sup>	Rate /1,000 Population
Anaheim	6,777	302,500	22.40
Brea	442	36,050	12.26
Buena Park	1,230	74,900	16.42
Costa Mesa	1,850	104,700	17.67
Cypress	550	48,150	11.42
Dana Point	481	37,050	12.98
Fountain Valley	648	55,900	11.59
Fullerton	1,867	125,600	14.86
Garden Grove	2,714	155,100	17.50
Huntington Beach	2,586	193,300	13.38
Irvine	1,583	133,700	11.84
Laguna Beach	213	24,650	8.64
Laguna Hills	403	30,500	13.21
Laguna Niguel	868	58,100	14.94
La Habra	1,059	55,400	19.12
Lake Forest	867	58,900	14.72
La Palma	150	16,050	9.35
Los Alamitos	216	11,900	18.15
Mission Viejo	1,172	95,100	12.32
Newport Beach	638	73,000	8.74
Orange	2,128	125,600	16.94
Placentia	759	47,350	16.03
San Clemente	871	48,450	17.98
San Juan Capistrano	494	31,200	15.83
Santa Ana	8,627	312,600	27.60
Seal Beach	158	26,850	5.88
Stanton	565	33,600	16.82
Tustin	1,493	66,700	22.38
Villa Park	32	6,575	4.87
Westminster	1,315	85,200	15.43
Yorba Linda	657	60,500	10.86
Rest of County	2,773	199,200	13.92
Total <sup>2</sup>	46,186	2,734,500	16.89

<sup>1</sup> Population based on January 1, 1998 population estimates from California Department of Finance.

<sup>2</sup> Population and rate are different from page one because population estimates for cities are only available for January 1, 1998 from the California Department of Finance.

**County of Orange**  
**Resident Births**  
**1998**

**Section 1. Birth & Infant Mortality Rates**

**Birth Rates by Race/Ethnicity of the Mother**

**Crude Birth Rates by Race/Ethnicity of the Mother**

<b>Race/Ethnicity of the Mother</b>	<b>Live Births</b>	<b>Rate /1,000 Population</b>
White <sup>1</sup>	18,054	11.39
African American	637	14.03
Hispanic	22,330	28.56
Asian/Pacific Islander	5,070	14.79
American Indian	95	11.63
Total	46,186	16.71

**Fertility Rates by Race/Ethnicity of the Mother**

<b>Race/Ethnicity of the Mother</b>	<b>Live Births</b>	<b>Rate /1,000 Women 15-44 Years</b>
White <sup>1</sup>	18,015	54.75
African American	637	56.42
Hispanic	22,257	129.00
Asian/Pacific Islander	5,055	60.86
American Indian	94	48.81
Total	46,058	77.04

**Teen (Mother's age 15 to 19) Birth Rates by Race/Ethnicity of the Mother**

<b>Race/Ethnicity of the Mother</b>	<b>Live Births</b>	<b>Rate /1,000 Women 15-19 Years</b>
White <sup>1</sup>	704	17.23
African American	58	37.16
Hispanic	2,786	107.61
Asian/Pacific Islander	142	11.71
American Indian	6	24.59
Total	3,696	45.81

**Infant Mortality Rates by Race/Ethnicity of the Mother<sup>2</sup>**

<b>Race/Ethnicity of the Mother</b>	<b>Infant Deaths</b>	<b>Rate<sup>3</sup> /1,000 Live Births</b>
White <sup>1</sup>	74	4.21
African American	4	--
Hispanic	101	4.53
Asian/Pacific Islander	25	4.93
American Indian	0	--
Total	204	4.42

<sup>1</sup> The California Department of Finance adds those race/ethnicity categories that do not meet the definitions of Hispanic, African-American, Asian/Pacific Islander or American Indian/Native Alaskan to the White/Other category.

<sup>2</sup> Birth certificates matched to death certificates.

<sup>3</sup> Rates not calculated for fewer than 5 events.

# County of Orange

## Resident Births

1998

### Section 2. Complications, Procedures & Abnormal Conditions

#### Complications & Procedures of Pregnancy & Concurrent Illnesses

<b>Complications, Concurrent Illnesses<sup>1</sup> and Risk Factors</b>	<b>Number</b>	<b>Rate /1,000 Live Births</b>
Premature labor	2,007	43.45
Diabetes	1,016	22.00
Pre-Eclampsia (pregnancy-induced hypertension, edema, and/or proteinurea)	875	18.95
Anemia (hct. < 30 and/or hgb. < 10)	530	11.48
Polyhydramnios / Oligohydramnios	414	8.96
Genital herpes	229	4.96
Tobacco use during pregnancy	212	4.59
Uterine bleeding before labor	195	4.22
Any previous live birth or fetal death $\geq$ 4,000 grams birthweight	177	3.83
Hepatitis B (acute infection or carrier)	157	3.40
Any previous live birth or fetal death < 37 weeks gestation	149	3.23
Hypertension, chronic	133	2.88
Sexually transmitted disease, other than genital herpes	112	2.42
Any previous live birth or fetal death < 2,500 grams birthweight	106	2.30
Incompetent cervix (with or without cerclage)	80	1.73
Pyelonephritis	78	1.69
Rh sensitization	60	1.30
Cardiac disease	49	1.06
Lung disease (acute or chronic)	48	1.04
Renal disease	18	0.39
Hemoglobinopathy	9	0.19
<u>Eclampsia (convulsions or coma)</u>	<u>7</u>	<u>0.15</u>
Total	6,661	144.22
<b><u>Procedures (Number of mothers reporting at least one of the following)</u></b>		
Ultrasound	29,363	635.76
Electronic fetal monitoring	4,100	88.77
Amniocentesis	1,239	26.83
Tocolysis	385	8.34
Cervical cerclage	55	1.19
<u>Chorionic villus sampling</u>	<u>14</u>	<u>0.30</u>
Total Procedures	35,156	761.18
<b>Other Complications and Procedures</b>	1,997	43.24

<sup>1</sup> Rubella was reported as a concurrent illness for 36 mothers; however, historically this has been miscoded related to immune status of the mother.

**County of Orange**  
**Resident Births**  
**1998**

**Section 2. Complications, Procedures & Abnormal Conditions**

**Complications & Procedures of Labor & Delivery**

<b>Complications</b>	<b>Number</b>	<b>Rate<sup>1</sup> /1,000 Live Births</b>
Presence of meconium, moderate to heavy	2,521	54.58
Breech or other abnormal presentation	1,509	32.67
Fetal distress	1,451	31.42
Febrile (>100° F, or >38° C)	1,005	21.76
Premature rupture of membrane (>12 hours)	835	18.08
Pre-eclampsia (pregnancy-induced hypertension, edema, and/or proteinuria)	786	17.02
Fetopelvic disproportion	535	11.58
Precipitous labor	529	11.45
Prolonged labor (>20 hours)	255	5.52
Shoulder dystocia	221	4.78
Unsuccessful vaginal birth	213	4.61
Placenta previa	183	3.96
Abruptio placenta	164	3.55
Amnionitis / sepsis	118	2.55
Genital herpes	83	1.80
Cord prolapse	70	1.52
Seizures during labor	12	0.26
Maternal death <sup>2</sup> (within 72 hours of delivery)	7	0.15
Eclampsia (convulsions or coma)	7	0.15
Anesthetic complications	4	--
Other dysfunctional labor	826	17.88
Other excessive bleeding	194	4.20
<b>Total Complications</b>	<b>11,528</b>	<b>249.60</b>
<b><u>Procedures (Number of mothers reporting at least one of the following)</u></b>		
Electronic fetal monitoring	37,117	803.64
Induction of labor	7,108	153.90
Stimulation of labor	6,573	142.32
Ultrasound	1,947	42.16
Tocolysis	78	1.69
Amniocentesis	57	1.23
Maternal blood transfusion	35	0.76
Transport of mother from another facility prior to labor	24	0.52
<b>Total Procedures</b>	<b>52,939</b>	<b>1,146.21</b>
<b>Other Complications and Procedures</b>	<b>2,831</b>	<b>61.30</b>

<sup>1</sup> Rates are not calculated for fewer than five events.

<sup>2</sup> Four of seven maternal deaths matched to death certificate data.

# County of Orange

## Resident Births

1998

### Section 2. Complications, Procedures & Abnormal Conditions

#### Abnormal Conditions & Clinical Procedures Relating to the Newborn

<b>Abnormal Conditions<sup>1</sup></b>	<b>Number</b>	<b>Rate /1,000 Live Births</b>
Hyaline membrane disease or RDS	132	2.86
Anemia (hct. < 39 and/or hbg. < 13)	64	1.39
Meconium aspiration syndrome	64	1.39
Anomalies of the skin, nail or hair	41	0.89
Birth injury, with or without specific site	41	0.89
Patent ductus arteriosus	21	0.45
Down's syndrome	19	0.41
Atrial septal defect	12	0.26
Cleft palate	12	0.26
Cleft palate with cleft lip	12	0.26
Drug withdrawal syndrome	10	0.22
Cleft lip	9	0.19
Hydrocephalus	8	0.17
Other anomalies of the respiratory system	99	2.14
Other anomalies of the heart	15	0.32
Other anomalies of the ear, face, and/or neck	12	0.26
Other anomalies of the urinary tract system	12	0.26
Other anomalies of the circulatory system	9	0.19
Other anomalies of the digestive system	9	0.19
Other anomalies of the genital system	9	0.19
Other polydactyly	8	0.17
Other anomalies of the musculoskeletal system	8	0.17
<u>Other anomalies with fewer than eight occurrences</u>	<u>123</u>	<u>2.66</u>
<b>Total Abnormal Conditions</b>	<b>749</b>	<b>16.22</b>
<b><u>Procedures Relating to the Newborn</u></b>		
Neonatal Intensive Care Unit (NICU)	1,846	39.97
Transfer of newborn to another facility	501	10.85
Assisted ventilation >= 30 minutes	322	6.97
<u>Assisted ventilation &lt; 30 minutes</u>	<u>39</u>	<u>0.84</u>
<b>Total Procedures</b>	<b>2,708</b>	<b>58.63</b>
 <b>Other Abnormal Conditions and Procedures</b>	 <b>1,766</b>	 <b>38.24</b>

<sup>1</sup> The Vital Statistics Section of the California Department of Health Services Center for Health Statistics considers the birth certificate data regarding congenital abnormalities unreliable. It is well documented that congenital anomalies, except for the most visible and most severe, are incompletely reported on birth certificates. The completeness of reporting specific anomalies depends on how easily they are recognized in the short time between birth and birth-registration.

**County of Orange**  
**Resident Births**  
**1998**

**Section 3. Number & Rate of Cesarean Deliveries**

**Births & Rates of Cesarean Delivery by Orange County Hospital,  
Total Births and Births to Residents of Orange County**

<b>Hospital</b>	<b>Total Births</b>	<b>Total C-Section</b>	<b>First C-Section</b>	<b>Repeat C-Section</b>	<b>C-Section Rate (%) of Total Births</b>
<b>Anaheim General Hospital</b>					
Total Births	918	235	136	99	25.60%
Orange County Residents	865	214	125	89	
<b>Anaheim Memorial M.C.</b>					
Total Births	773	131	76	55	16.95%
Orange County Residents	695	119	68	51	
<b>Chapman Medical Center</b>					
Total Births	481	128	77	51	26.61%
Orange County Residents	468	127	76	51	
<b>Coastal Communities Hospital</b>					
Total Births	1,723	354	195	159	20.55%
Orange County Residents	1,701	351	195	156	
<b>Fountain Valley Regional M.C.</b>					
Total Births	3,825	716	434	282	18.72%
Orange County Residents	3,646	689	417	272	
<b>Garden Grove Hosp. &amp; M.C.</b>					
Total Births	2,025	515	314	201	25.43%
Orange County Residents	1,930	486	297	189	
<b>Hoag Memorial Hospital</b>					
Total Births	4,642	1,178	764	414	25.38%
Orange County Residents	4,428	1,118	729	389	
<b>Irvine Medical Center</b>					
Total Births	1,525	339	227	112	22.23%
Orange County Residents	1,461	329	222	107	
<b>Kaiser Foundation, Anaheim</b>					
Total Births	3,703	618	375	243	16.69%
Orange County Residents	3,093	506	298	208	
<b>La Palma Intercommunity</b>					
Total Births	683	166	97	69	24.30%
Orange County Residents	350	90	55	35	
<b>Los Alamitos M.C.</b>					
Total Births	2,421	522	296	226	21.56%
Orange County Residents	581	153	86	67	
<b>Martin Luther Hosp. M.C.</b>					
Total Births	1,693	361	192	169	21.32%
Orange County Residents	1,564	334	175	159	
<b>Mission Hosp Regional M.C.</b>					
Total Births	3,449	566	328	238	16.41%
Orange County Residents	3,370	546	318	228	
<b>Orange Coast Memorial M.C.</b>					
Total Births	525	104	57	47	19.81%
Orange County Residents	415	78	45	33	

(continued on next page)

**County of Orange**  
**Resident Births**  
**1998**

**Section 3. Number & Rate of Cesarean Deliveries**

**Births & Rates of Cesarean Delivery by Orange County Hospital,  
Total Births and Births to Residents of Orange County (continued)**

<b>Hospital</b>	<b>Total Births</b>	<b>Total C-Section</b>	<b>First C-Section</b>	<b>Repeat C-Section</b>	<b>C-Section Rate (%) of Total Births</b>
<b>Placentia Linda Community</b>					
Total Births	688	153	141	12	22.24%
Orange County Residents	593	121	112	9	
<b>Saddleback Memorial M.C.</b>					
Total Births	2,422	489	301	188	20.19%
Orange County Residents	2,336	474	291	183	
<b>Samaritan M.C. - San Clemente</b>					
Total Births	385	72	34	38	18.70%
Orange County Residents	373	70	33	37	
<b>Santa Ana Medical Center</b>					
Total Births	1,884	355	214	141	18.84%
Orange County Residents	1,864	350	211	139	
<b>South Coast Medical Center</b>					
Total Births	447	95	57	38	21.25%
Orange County Residents	434	91	56	35	
<b>St. Joseph Hospital</b>					
Total Births	5,839	1,185	757	428	20.29%
Orange County Residents	5,376	1,068	689	379	
<b>St. Jude Medical Center - Fullerton</b>					
Total Births	2,615	558	380	178	21.34%
Orange County Residents	1,962	413	282	131	
<b>UCI Medical Center</b>					
Total Births	1,405	379	227	152	26.98%
Orange County Residents	1,280	343	201	142	
<b>West Anaheim Medical Center</b>					
Total Births	480	89	52	37	18.54%
Orange County Residents	455	85	49	36	
<b>Western Medical Center-Anaheim</b>					
Total Births	1,342	271	131	140	20.19%
Orange County Residents	1,309	262	128	134	
<b>Western Medical Center-Santa Ana</b>					
Total Births	2,775	556	303	253	20.04%
Orange County Residents	2,729	543	299	244	
<b>At Home</b>					
Total Births	140	-	-	-	-
Orange County Residents	139	-	-	-	-
<b>Other locations/Unknown</b>					
Total Births	2,795	638	380	258	22.83%
Orange County Residents	2,769	635	379	256	
<b>Total</b>					
Total Births	51,603	10,773	6,545	4,228	20.88%
Orange County Residents	46,186	9,595	5,836	3,759	



**County of Orange**  
**Resident Births**  
**1998**  
**Section 4. Birth Weight**

**Birth Weight by Race/Ethnicity of Mother**

<b>Birth weight (g)<sup>1</sup></b>	<b>Race/Ethnicity of Mother</b>							<b>Total</b>
	<b>White</b>	<b>African-American</b>	<b>Hispanic</b>	<b>Southeast Asian</b>	<b>Other Asian</b>	<b>Other<sup>2</sup></b>	<b>Unknown</b>	
Mean	3,430	3,217	3,363	3,178	3,269	3,204	3,424	3,370
Median	3,460	3,305	3,387	3,203	3,280	3,232	3,459	3,400
Std. Deviation	580.02	636.58	560.73	493.40	560.51	574.62	618.33	570.48
<b>Birth weight Group</b>								
<b>&lt; 1,500 g</b>	160	15	228	21	35	4	1	464
% of column	0.91	2.35	1.02	0.99	1.18	0.82	0.84	1.00
% of row	34.48	3.23	49.14	4.53	7.54	0.86	0.22	100.00
<b>1,500-2,499 g</b>	780	40	952	106	152	39	6	2,075
% of column	4.44	6.28	4.27	5.02	5.14	7.96	5.04	4.49
% of row	37.59	1.93	45.88	5.11	7.33	1.88	0.29	100.00
<b>2,500-3,499 g</b>	8,311	378	12,159	1,503	1,818	305	63	24,537
% of column	47.32	59.34	54.51	71.13	61.48	62.24	52.94	53.13
% of row	33.87	1.54	49.55	6.13	7.41	1.24	0.26	100.00
<b>3,500-4,499 g</b>	7,953	199	8,637	475	914	138	46	18,362
% of column	45.28	31.24	38.72	22.48	30.91	28.16	38.66	39.76
% of row	43.31	1.08	47.04	2.59	4.98	0.75	0.25	100.00
<b>4,500+ g</b>	361	5	329	8	38	4	3	748
% of column	2.06	0.78	1.48	0.38	1.29	0.82	2.52	1.62
% of row	48.26	0.67	43.98	1.07	5.08	0.53	0.40	100.00
<b>Total</b>	17,565	637	22,305	2,113	2,957	490	119	46,186
% of column	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
% of row	38.03	1.38	48.29	4.57	6.40	1.06	0.26	100.00

<sup>1</sup> Birth weight in grams.

<sup>2</sup> Other race/ethnicity defined as Native Americans, Alaskan Natives, Native Hawaiians and those who described themselves as "Other" race/ethnicity.

Note: Due to rounding, percentages may not add to 100.

**County of Orange**  
**Resident Births**  
**1998**  
**Section 4. Birth Weight**

**Very Low Birth Weight Incidence by Race/Ethnicity of Mother**

	Race/Ethnicity of Mother							
<b>Birth Weight (g)<sup>1</sup></b>	<b>White</b>	<b>African-American</b>	<b>Hispanic</b>	<b>Southeast Asian</b>	<b>Other Asian</b>	<b>Other<sup>3</sup></b>	<b>Unknown</b>	<b>Total</b>
<b>Very low birth weight (&lt; 1,500 g)</b>	160	15	228	21	35	4	1	464
Rate <sup>2</sup>	9.11	23.55	10.22	9.94	11.84	8.16	8.40	10.05

**Low Birth Weight Incidence by Race/Ethnicity of Mother**

	Race/Ethnicity of Mother							
<b>Birth Weight (g)<sup>1</sup></b>	<b>White</b>	<b>African-American</b>	<b>Hispanic</b>	<b>Southeast Asian</b>	<b>Other Asian</b>	<b>Other<sup>3</sup></b>	<b>Unknown</b>	<b>Total</b>
<b>Low birth weight (&lt; 2,500 g)</b>	940	55	1,180	127	187	43	7	2,539
Rate <sup>2</sup>	53.52	86.34	52.90	60.10	63.24	87.76	58.82	54.97

<sup>1</sup> Birth weight in grams.

<sup>2</sup> Rate is calculated per 1,000 live births.

<sup>3</sup> Other race/ethnicity defined as Native Americans, Alaskan Natives, Native Hawaiians and those who described themselves as "Other" race/ethnicity.

**County of Orange**  
**Resident Births**  
**1998**  
**Section 4. Birth Weight**

**Mother's Age by Child's Birth Weight**

<b>Mother's Age<sup>1,2</sup></b>	<b>Child's Birth Weight<sup>3</sup></b>					
	<b>&lt; 1,500 g</b>	<b>1,500 - 2,499 g</b>	<b>2,500 - 3,499 g</b>	<b>3,500 - 4,499 g</b>	<b>4,500 + g</b>	<b>Total</b>
< 15 Years	3	3	39	16	0	61
% of column	0.65	0.14	0.16	0.09	0.00	0.13
% of row	4.92	4.92	63.93	26.23	0.00	100.00
15-17 Years	22	85	800	402	6	1,315
% of column	4.74	4.10	3.26	2.19	0.80	2.85
% of row	1.67	6.46	60.84	30.57	0.46	100.00
18-19 Years	27	111	1,436	792	15	2,381
% of column	5.82	5.35	5.85	4.31	2.01	5.16
% of row	1.13	4.66	60.31	33.26	0.63	100.00
20-24 Years	74	403	5,284	3,311	125	9,197
% of column	15.95	19.42	21.54	18.03	16.71	19.91
% of row	0.80	4.38	57.45	36.00	1.36	100.00
25-29 Years	117	493	7,065	5,449	209	13,333
% of column	25.22	23.76	28.80	29.68	27.94	28.87
% of row	0.88	3.70	52.99	40.87	1.57	100.00
30-34 Years	110	543	6,226	5,190	245	12,314
% of column	23.71	26.17	25.38	28.27	32.75	26.66
% of row	0.89	4.41	50.56	42.15	1.99	100.00
35-39 Years	88	350	3,041	2,681	122	6,282
% of column	18.97	16.87	12.40	14.60	16.31	13.60
% of row	1.40	5.57	48.41	42.68	1.94	100.00
40-44 Years	19	81	609	501	26	1,236
% of column	4.09	3.90	2.48	2.73	3.48	2.68
% of row	1.54	6.55	49.27	40.53	2.10	100.00
45 + Years	4	6	34	19	0	63
% of column	0.86	0.29	0.14	0.10	0.00	0.14
% of row	6.35	9.52	53.97	30.16	0.00	100.00
Total	464	2,075	24,534	18,361	748	46,182
% of column	100.00	100.00	100.00	100.00	100.00	100.00
% of row	1.00	4.49	53.12	39.76	1.62	100.00

<sup>1</sup> Mother's age at time of delivery.

<sup>2</sup> Age unknown for four mothers.

<sup>3</sup> Birth weight in grams.

Note: Due to rounding, percentages may not add to 100.

**County of Orange**  
**Resident Births**  
**1998**  
**Section 5. Prenatal Care**

**Trimester Prenatal Care Initiated by Mother's Education Level**

Trimester Prenatal Care Initiated	Mother's Education Level <sup>1</sup>						Total
	No High School	Some High School	High School Graduate	Some College	College Graduate	Post-Graduate	
<b>First trimester</b>	5,065	5,874	10,109	7,731	6,506	3,917	39,202
% of column	75.43	76.52	84.31	89.55	94.85	95.86	85.30
% of row	12.92	14.98	25.79	19.72	16.60	9.99	100.00
<b>Second trimester</b>	1,265	1,423	1,506	719	269	127	5,309
% of column	18.84	18.54	12.56	8.33	3.92	3.11	11.55
% of row	23.83	26.80	28.37	13.54	5.07	2.39	100.00
<b>Third trimester</b>	269	279	244	109	39	15	955
% of column	4.01	3.63	2.04	1.26	0.57	0.37	2.08
% of row	28.17	29.21	25.55	11.41	4.08	1.57	100.00
<b>No prenatal care</b>	75	65	59	29	6	1	235
% of column	1.12	0.85	0.49	0.34	0.09	0.02	0.51
% of row	31.91	27.66	25.11	12.34	2.55	0.43	100.00
<b>Unknown</b>	41	34	72	45	39	26	257
% of column	0.61	0.44	0.60	0.52	0.57	0.64	0.56
% of row	15.95	13.23	28.02	17.51	15.18	10.12	100.00
<b>Total</b>	6,715	7,675	11,990	8,633	6,859	4,086	45,958
% of column	100.00	100.00	100.00	100.00	100.00	100.00	100.00
% of row	14.61	16.70	26.09	18.78	14.92	8.89	100.00

<sup>1</sup> Unknowns for mother's education level are excluded from analysis (n=228).

Note: Due to rounding, percentages may not add to 100.

**County of Orange**  
**Resident Births**  
**1998**  
**Section 5. Prenatal Care**

**Trimester Prenatal Care Initiated by Race/Ethnicity of Mother**

Trimester Prenatal Care Initiated	Race/Ethnicity of Mother							Total
	White	African-American	Hispanic	Southeast Asian	Other Asian	Other <sup>1</sup>	Unknown	
<b>First trimester</b>	16,122	540	17,737	1,878	2,578	427	94	39,376
% of column	91.78	84.77	79.52	88.88	87.18	87.14	78.99	85.26
% of row	40.94	1.37	45.05	4.77	6.55	1.08	0.24	100.00
<b>Second trimester</b>	1,088	69	3,618	198	299	45	7	5,324
% of column	6.19	10.83	16.22	9.37	10.11	9.18	5.88	11.53
% of row	20.44	1.30	67.96	3.72	5.62	0.85	0.13	100.00
<b>Third trimester</b>	171	15	690	25	46	14	0	961
% of column	0.97	2.35	3.09	1.18	1.56	2.86	0.00	2.08
% of row	17.79	1.56	71.80	2.60	4.79	1.46	0.00	100.00
<b>No prenatal care</b>	63	11	146	4	12	1	4	241
% of column	0.36	1.73	0.65	0.19	0.41	0.20	3.36	0.52
% of row	26.14	4.56	60.58	1.66	4.98	0.41	1.66	100.00
<b>Unknown</b>	121	2	114	8	22	3	14	284
% of column	0.69	0.31	0.51	0.38	0.74	0.61	11.76	0.61
% of row	42.61	0.70	40.14	2.82	7.75	1.06	4.93	100.00
<b>Total</b>	17,565	637	22,305	2,113	2,957	490	119	46,186
% of column	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
% of row	38.03	1.38	48.29	4.57	6.40	1.06	0.26	100.00

<sup>1</sup> Other race/ethnicity defined as Native Americans, Alaskan Natives, Native Hawaiians and those who described themselves as "Other" race/ethnicity.

Note: Due to rounding, percentages may not add to 100.

**County of Orange**  
**Resident Births**  
**1998**  
**Section 5. Prenatal Care**

**Trimester Prenatal Care Initiated by Mother's Age**

	<b>Mother's Age<sup>1,2</sup></b>									
<b>Trimester Prenatal Care Initiated</b>	<b>&lt; 15 Years</b>	<b>15-17 Years</b>	<b>18-19 Years</b>	<b>20-24 Years</b>	<b>25-29 Years</b>	<b>30-34 Years</b>	<b>35-39 Years</b>	<b>40-44 Years</b>	<b>45 + Years</b>	<b>Total</b>
<b>First trimester</b>	27	895	1,756	7,284	11,569	11,061	5,663	1,061	58	39,374
% of column	44.26	68.06	73.75	79.20	86.77	89.82	90.15	85.84	92.06	85.26
% of row	0.07	2.27	4.46	18.50	29.38	28.09	14.38	2.69	0.15	100.00
<b>Second trimester</b>	28	323	475	1,524	1,369	996	476	129	4	5,324
% of column	45.90	24.56	19.95	16.57	10.27	8.09	7.58	10.44	6.35	11.53
% of row	0.53	6.07	8.92	28.63	25.71	18.71	8.94	2.42	0.08	100.00
<b>Third trimester</b>	5	71	110	253	268	154	74	26	0	961
% of column	8.20	5.40	4.62	2.75	2.01	1.25	1.18	2.10	0.00	2.08
% of row	0.52	7.39	11.45	26.33	27.89	16.02	7.70	2.71	0.00	100.00
<b>No prenatal care</b>	1	17	24	70	59	37	24	8	0	240
% of column	1.64	1.29	1.01	0.76	0.44	0.30	0.38	0.65	0.00	0.52
% of row	0.42	7.08	10.00	29.17	24.58	15.42	10.00	3.33	0.00	100.00
<b>Unknown</b>	0	9	16	66	68	66	45	12	1	283
% of column	0.00	0.68	0.67	0.72	0.51	0.54	0.72	0.97	1.59	0.61
% of row	0.00	3.18	5.65	23.32	24.03	23.32	15.90	4.24	0.35	100.00
<b>Total</b>	61	1,315	2,381	9,197	13,333	12,314	6,282	1,236	63	46,182
% of column	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
% of row	0.13	2.85	5.16	19.91	28.87	26.66	13.60	2.68	0.14	100.00

<sup>1</sup> Mother's age at time of delivery.

<sup>2</sup> Age unknown for four mothers.

Note: Due to rounding, percentages may not add to 100.

**County of Orange**  
**Resident Births**  
**1998**  
**Section 6. Payment Source**

**Principal Payment Source for Prenatal Care by Race/Ethnicity of Mother**

Payment Source for Prenatal Care	Race/Ethnicity of Mother							Total <sup>2</sup>
	White	African-American	Hispanic	Southeast Asian	Other Asian	Other	Unknown	
<b>Medi-Cal</b>	1,780	170	11,752	623	317	64	14	14,720
% of column	10.14	26.77	52.71	29.48	10.74	13.06	12.39	31.89
% of row	12.09	1.15	79.84	4.23	2.15	0.43	0.10	100.00
<b>HMO/Private</b>	15,053	413	9,059	1,445	2,361	411	82	28,824
% of column	85.72	65.04	40.63	68.39	79.98	83.88	72.57	62.45
% of row	52.22	1.43	31.43	5.01	8.19	1.43	0.28	100.00
<b>No care</b>	63	11	146	4	12	1	4	241
% of column	0.36	1.73	0.65	0.19	0.41	0.20	3.54	0.52
% of row	26.14	4.56	60.58	1.66	4.98	0.41	1.66	100.00
<b>Other<sup>1</sup></b>	664	41	1,337	41	262	14	13	2,372
% of column	3.78	6.46	6.00	1.94	8.88	2.86	11.50	5.14
% of row	27.99	1.73	56.37	1.73	11.05	0.59	0.55	100.00
<b>Total</b>	17,560	635	22,294	2,113	2,952	490	113	46,157
% of column	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
% of row	38.04	1.38	48.30	4.58	6.40	1.06	0.24	100.00

**Expected Payment Source for Delivery by Race/Ethnicity of Mother**

Payment Source for Delivery	Race/Ethnicity of Mother							Total <sup>2</sup>
	White	African-American	Hispanic	Southeast Asian	Other Asian	Other	Unknown	
<b>Medi-Cal</b>	1,792	174	11,852	625	321	64	14	14,842
% of column	10.21	27.49	53.21	29.58	10.89	13.06	12.61	32.18
% of row	12.07	1.17	79.85	4.21	2.16	0.43	0.09	100.00
<b>HMO/Private</b>	15,097	416	9,086	1,451	2,369	412	83	28,914
% of column	86.01	65.72	40.80	68.67	80.33	84.08	74.77	62.69
% of row	52.21	1.44	31.42	5.02	8.19	1.42	0.29	100.00
<b>Unattended</b>	4	0	0	0	1	0	1	6
% of column	0.02	0.00	0.00	0.00	0.03	0.00	0.90	0.01
% of row	66.67	0.00	0.00	0.00	16.67	0.00	16.67	100.00
<b>Other<sup>1</sup></b>	660	43	1,334	37	258	14	13	2,359
% of column	3.76	6.79	5.99	1.75	8.75	2.86	11.71	5.11
% of row	27.98	1.82	56.55	1.57	10.94	0.59	0.55	100.00
<b>Total</b>	17,553	633	22,272	2,113	2,949	490	111	46,121
% of column	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
% of row	38.06	1.37	48.29	4.58	6.39	1.06	0.24	100.00

<sup>1</sup> Other includes Medi-Care, Worker's Compensation, Other Government funds and Other non-Government funds.

<sup>2</sup> Missing for payment source for prenatal care (n=29) and expected payment source for delivery (N=65) excluded.

Note: Due to rounding, percentages may not add to 100.

**County of Orange**  
**Resident Births**  
**1998**  
**Section 7. Parental Age**

**Father's Age Statistics by Mother's Age Group**

<b>Mother's Age</b>		<b>Father's Age Statistics in Years</b>					
<b>Mother's Age Group <sup>1</sup></b>	<b>Mother's N</b>	<b>Father's N</b>	<b>Father's Mean</b>	<b>Father's Median</b>	<b>Father's Minimum</b>	<b>Father's Maximum</b>	<b>Father's Std. Deviation</b>
< 15 Years	61	29	19.34	18.0	15	37	4.73
15-17 Years	1,315	1,028	20.60	20.0	14	47	3.90
18-19 Years	2,381	2,072	22.80	22.0	15	46	4.22
20-24 Years	9,197	8,478	25.98	25.0	15	80	4.64
25-29 Years	13,333	12,898	30.21	30.0	18	61	4.58
30-34 Years	12,314	12,019	34.07	34.0	19	74	4.70
34-39 Years	6,282	6,135	37.64	37.0	20	72	5.20
40-44 Years	1,236	1,174	40.63	41.0	20	70	5.99
= 45 Years	63	61	44.51	45.0	26	73	8.33

**Difference in Father's & Mother's (Father's Age-Mother's Age) Age by Mother's Age Group**

<b>Mother's Age</b>		<b>Difference in Father's and Mother's Age Statistics in Years</b>					
<b>Mother's Age Group <sup>1</sup></b>	<b>Mother's N</b>	<b>Father's N</b>	<b>Mean Difference</b>	<b>Median Difference</b>	<b>Minimum Difference</b>	<b>Maximum Difference</b>	<b>Std. Deviation Difference</b>
< 15 Years	61	29	5.48	5.0	1	23	4.69
15-17 Years	1,315	1,028	4.18	3.0	-2	32	3.86
18-19 Years	2,381	2,072	4.23	3.0	-4	28	4.18
20-24 Years	9,197	8,478	3.82	3.0	-6	59	4.47
25-29 Years	13,333	12,898	3.09	2.0	-10	36	4.44
30-34 Years	12,314	12,019	2.19	2.0	-14	42	4.57
34-39 Years	6,282	6,135	1.10	1.0	-19	36	5.14
40-44 Years	1,236	1,174	-0.54	0.0	-20	28	5.99
= 45 Years	63	61	-1.22	0.0	-21	28	8.15

Examples: If the father's age is 29 and the mother's age is 22 the difference would be 7. If the father's age is 30 and the mother's age is 34 the difference would be -4. For mothers age 15-17 years, fathers ranged from two years younger (-2) than the mother to 32 years older than the mother and on average fathers were 4.18 years older than mothers in this age range.

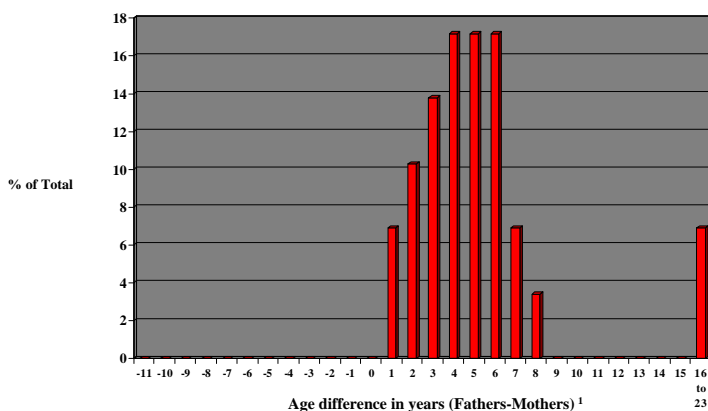
<sup>1</sup> Mother's age unknown for 4 persons, father's age is also unknown for two of these.



**County of Orange**  
**Resident Births**  
**1998**  
**Section 7. Parental Age**

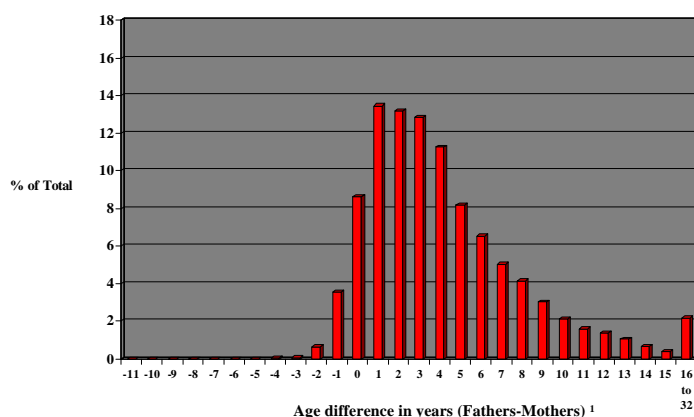
**Difference in Father's and Mother's (Father's Age-Mother's Age) Age by Mother's Age Group**

**Mother's Age Group < 15 Years (n=29)**



Father's age unknown for 32 (52.5%) of births

**Mother's Age Group 15-19 Years (n=3,100)**



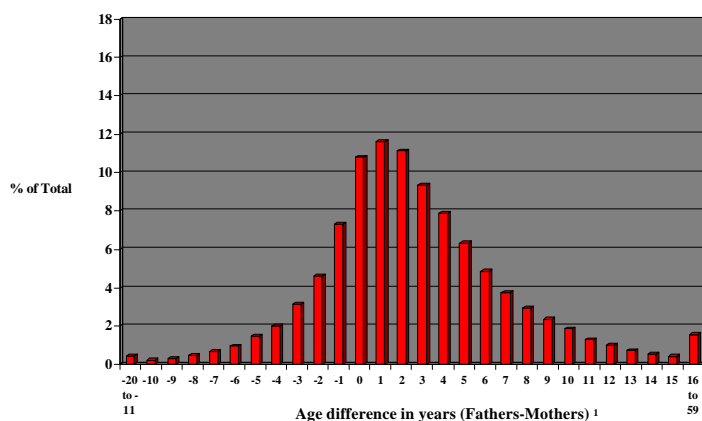
Father's age unknown for 596 (16.1%) of births

<sup>1</sup> Examples: If the father's age is 29 and the mother's age is 22 the difference would be 7. If the father's age is 30 and the mother's age is 34 the difference would be -4.

**County of Orange**  
**Resident Births**  
**1998**  
**Section 7. Parental Age**

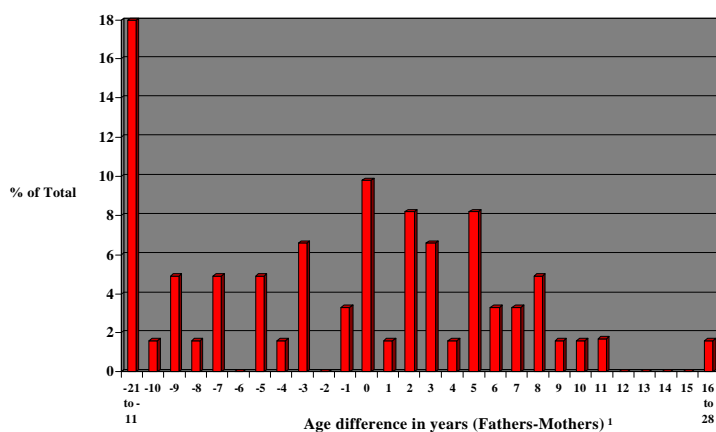
**Difference in Father's and Mother's (Father's Age-Mother's Age) Age by Mother's Age Group**

**Mother's Age Group 20-44 Years (n=40,704)**



Father's age unknown for 1,658 (3.9%) of births

**Mother's Age Group  $\geq 45$  Years (n=61)**



Father's age unknown for 2 (3.2%) of births

<sup>1</sup> Examples: If the father's age is 29 and the mother's age is 22 the difference would be 7. If the father's age is 30 and the mother's age is 34 the difference would be -4.

# County of Orange

## Resident Births

1998

### Section 8. Comparison of Mother's & Father's Ethnicity

#### Mother's Race/Ethnicity by Father's Race/Ethnicity

Mother's Race/Ethnicity	Father's Race/Ethnicity							
	White	African-American	Hispanic	Southeast Asian	Other Asian	Other <sup>1</sup>	Unknown	Total
<b>White</b>	14,440	294	1,834	45	327	82	543	17,565
% of column	83.98	30.72	8.75	2.26	12.97	16.08	26.47	38.03
% of row	82.21	1.67	10.44	0.26	1.86	0.47	3.09	100.00
<b>African-American</b>	88	443	38	0	5	3	60	637
% of column	0.51	46.29	0.18	0.00	0.20	0.59	2.93	1.38
% of row	13.81	69.54	5.97	0.00	0.78	0.47	9.42	100.00
<b>Hispanic</b>	1,854	155	18,888	33	142	36	1,197	22,305
% of column	10.78	16.20	90.11	1.66	5.63	7.06	58.36	48.29
% of row	8.31	0.69	84.68	0.15	0.64	0.16	5.37	100.00
<b>Southeast Asian</b>	99	8	19	1,837	73	2	75	2,113
% of column	0.58	0.84	0.09	92.22	2.89	0.39	3.66	4.57
% of row	4.69	0.38	0.90	86.94	3.45	0.09	3.55	100.00
<b>Other Asian</b>	652	47	147	76	1,967	12	56	2,957
% of column	3.79	4.91	0.70	3.82	77.99	2.35	2.73	6.40
% of row	22.05	1.59	4.97	2.57	66.52	0.41	1.89	100.00
<b>Other<sup>1</sup></b>	57	9	33	1	8	375	7	490
% of column	0.33	0.94	0.16	0.05	0.32	73.53	0.34	1.06
% of row	11.63	1.84	6.73	0.20	1.63	76.53	1.43	100.00
<b>Unknown</b>	4	1	1	0	0	0	113	119
% of column	0.02	0.10	0.00	0.00	0.00	0.00	5.51	0.26
% of row	3.36	0.84	0.84	0.00	0.00	0.00	94.96	100.00
<b>Total</b>	17,194	957	20,960	1,992	2,522	510	2,051	46,186
% of column	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
% of row	37.23	2.07	45.38	4.31	5.46	1.10	4.44	100.00

<sup>1</sup> Other race/ethnicity defined as Native Americans, Alaskan Natives, Native Hawaiians and those who described themselves as "Other" race/ethnicity.

Note: Due to rounding, percentages may not add to 100.

# Appendix 1

## County of Orange Resident Births 1998

### Number of Births by Race/Ethnicity of the Mother

Race/Ethnicity of the Mother	Live Births	Percent
White	17,565	38.03%
African American	637	1.38%
Hispanic	22,305	48.29%
Asian/Pacific Islander	5,070	10.98%
American Indian	95	0.21%
Other	395	0.86%
Unknown/Not Stated	119	0.26%
Total	46,186	100.00%

### Number of Births to Mothers Aged 15-44 Years by Race/Ethnicity of the Mother

Race/Ethnicity of the Mother	Live Births	Percent
White	17,502	38.00%
African American	637	1.38%
Hispanic	22,257	48.32%
Asian/Pacific Islander	5,055	10.98%
American Indian	94	0.20%
Other	394	0.86%
Unknown/Not Stated	119	0.26%
Total	46,058	100.00%

### Number of Births to Teens (Mother's age 15-19) by Race/Ethnicity of the Mother

Race/Ethnicity of the Mother	Live Births	Percent
White	689	18.64%
African American	58	1.57%
Hispanic	2,786	75.38%
Asian/Pacific Islander	142	3.84%
American Indian	6	0.16%
Other	11	0.30%
Unknown/Not Stated	4	0.11%
Total	3,696	100.00%

### Number of Infant Deaths by Race/Ethnicity of the Mother<sup>1</sup>

Race/Ethnicity of the Mother	Infant/Neonatal	
	Deaths	Percent
White	72	35.29%
African American	4	1.96%
Hispanic	101	49.51%
Asian/Pacific Islander	25	12.25%
American Indian	0	0.00%
Other	1	0.49%
Unknown/Not Stated	1	0.49%
Total	204	100.00%

<sup>1</sup> Birth certificates matched to death certificates.

Note: Due to rounding, percentages may not add to 100.

## Appendix 2

### County of Orange Resident Births 1998

#### July 1, 1998 Orange County Population Estimates<sup>1</sup>

<b>Males</b>	<b>Total</b>	<b>White/Other<sup>2</sup></b>	<b>Hispanic</b>	<b>API<sup>3</sup></b>	<b>African- American</b>	<b>American Indian</b>
< 15	341,613	150,104	141,670	43,163	5,959	717
15-17	52,083	26,175	16,967	7,766	1,025	150
18-19	33,257	16,800	10,607	5,068	665	117
20-24	83,537	40,057	27,456	13,471	2,276	277
25-29	115,157	50,569	46,376	14,906	2,928	378
30-34	131,393	64,415	49,501	14,307	2,765	405
35-39	132,338	76,584	38,112	15,236	2,012	394
40-44	113,466	71,020	26,120	14,473	1,493	360
45-49	93,245	61,550	17,650	12,299	1,398	348
50-54	80,302	57,191	12,241	9,407	1,179	284
55+	220,451	169,067	26,994	21,604	2,131	655
<b>Total</b>	<b>1,396,842</b>	<b>783,532</b>	<b>413,694</b>	<b>171,700</b>	<b>23,831</b>	<b>4,085</b>

<b>Females</b>	<b>Total</b>	<b>White/Other<sup>2</sup></b>	<b>Hispanic</b>	<b>API<sup>3</sup></b>	<b>African- American</b>	<b>American Indian</b>
< 15	325,156	142,328	135,746	40,732	5,703	647
15-17	49,528	24,906	16,174	7,350	943	155
18-19	31,151	15,947	9,715	4,782	618	89
20-24	77,319	38,117	24,604	12,503	1,850	245
25-29	99,501	49,448	33,275	14,163	2,293	322
30-34	114,049	61,043	36,163	14,163	2,311	369
35-39	118,848	71,301	30,121	15,253	1,798	375
40-44	107,446	68,269	22,483	14,846	1,477	371
45-49	94,044	63,071	16,111	13,101	1,417	344
50-54	83,335	60,048	11,955	9,909	1,064	359
55+	266,615	207,697	31,713	24,292	2,105	808
<b>Total</b>	<b>1,366,992</b>	<b>802,175</b>	<b>368,060</b>	<b>171,094</b>	<b>21,579</b>	<b>4,084</b>

**Grand total** 2,763,834

<sup>1</sup> Population estimates obtained from the California Department of Finance web site:

<http://www.dof.ca.gov/HTML/DEMOGRAP/data.htm>

State of California, Department of Finance, *Race/Ethnic Population with Age and Sex Detail, 1970-2040*. Sacramento, CA, December 1998.

<sup>2</sup> The California Department of Finance adds those race/ethnicities categories that do not meet the definitions of Hispanic, African-American, Asian/Pacific Islander or American Indian/Native Alaskan to the White/Other category.

<sup>3</sup> API is Asian and Pacific Islanders.

## Appendix 3

### Technical Notes

#### **Implementation of Electronic Registration of Births**

In 1994, Orange County implemented the Automated Vital Statistics System (AVSS) developed by the University of California at Santa Barbara, for registering births electronically. Prior to 1994, the file of Orange County births consisted of selected items and limited information about some items from the birth certificate. With the implementation of AVSS, all of the information on the birth certificate is now available in the birth file. The data fields most impacted by the change in the system are discussed below.

##### *Mother's Residence:*

Previously, only the codes for mother's city of residence and census tract were included in the birth file. Starting in 1994, the data file contains mother's complete address.

##### *Parent's Demographic Information (Race, Ethnicity, City, ZIP code and Census Tract):*

In addition to codes for race and Hispanic status from the birth certificate, the 1994 format of the birth file also includes the race and Hispanic background stated by the parents.

An extensive effort has gone into the verification and correction when necessary, of the codes for parent's race and ethnicity, as well as the mother's city of residence, ZIP code and Census tract using the detailed information now available. A slight difference between the numbers of birth by city, ZIP code and the ethnic distribution reported here and those available from other sources may be due to this extensive quality assurance process.

##### *Complication and Procedures of Pregnancy and Concurrent Illnesses:*

Prior to 1994, only the first two of the sixteen possible complications and procedures of pregnancy listed on the birth certificate were included on the birth file.

##### *Complications and Procedures of Labor and Delivery:*

Prior to 1994, only the first of the nine possible complications and procedure of labor and delivery listed on the birth certificate were included in the birth file.

##### *Abnormal Conditions and Clinical Procedures:*

Prior to 1994, only the first of ten possible abnormal conditions and clinical procedures listed on the birth certificate was included in the birth file.

All the complications that are listed on the birth certificate in each of the above categories are included in the birth file beginning in 1994. It is important to note that the increase in the number of births with certain complications and procedures in this document compared to documents prior to 1994 can be attributed to the additional information now available.

#### **Notes**

##### *Race/Ethnicity of the Child:*

To be consistent with the change made by the National Center for Health Statistics, beginning with 1994 only the mother's race and ethnicity is used for determining the race and ethnicity of the child. In previous

documents, the race and ethnicity of the father and mother were used. Birth rates and infant death rates by race and ethnicity (page 3) are calculated using California Department of Finance (DOF) population estimates. DOF utilizes five mutually exclusive race and Hispanic origin categories. These categories are Hispanic, White/Other Races/Non-Hispanic, African-American/Black/Non-Hispanic, Asian/Pacific Islander/Non-Hispanic and American Indian/Non-Hispanic (See Appendix 2). For the purposes of space conservation, these categories are listed in the tables on page 3 as Hispanic, White, African-American, Asian/Pacific Islander (API) and American Indian. To be consistent with DOF population data, when fertility rates are calculated the race and ethnicity categories that do not meet the definition for Hispanic, African-American/Black, Asian/Pacific Islander or American Indian are added to the White category.

Elsewhere in this document, seven race and Hispanic categories are utilized: White, Hispanic, African-American, Southeast Asian, Other Asian, Unknown and Other. Other is used to define Native Americans, Alaskan Natives, Native Hawaiians, and those who describe themselves as "Other" or do not fit into the previously defined categories. It is felt that these seven categories better represent the diverse population of Orange County. The categories are not used in the calculation of rates due to the lack of DOF population estimates for all of these groups.

#### *Abnormal Conditions and Clinical Procedures:*

The Vital Statistics Section of the California Department of Health Services Center for Health Statistics considers the birth certificate data regarding congenital abnormalities unreliable. It is well documented that congenital anomalies, except for the most visible and most severe, are incompletely reported on birth certificates. The completeness of reporting specific anomalies depends on how easily they are recognized in the short time between birth and birth-registration. The State of California collects this information only as a part of their contract with the National Center for Health Statistics. In view of the above information, the data regarding abnormal conditions in this document could be misleading and, therefore should be used with caution.

#### *Birth Weight and Gestational age:*

Starting with 1995, to be consistent with the definitions used by the Centers for Disease Control, the classification categories of birth weight of the infant have been modified. Due to the large amount of inaccurate data on gestational age of the child, these tables have been removed from the 1998 birth document.

### **Populations**

Three different population sources were used to calculate the rates used in this document. All three populations are publicly available from the California Department of Finance (DOF) and are available on the DOF web site, <http://www.dof.ca.gov>. The population statistics used for this document are available in the following publications: E2 County Population Estimates for July 1, 1998; Hist-E4 Historical Estimates of California Cities and Counties, April 1990 through January 1999; and Race/Ethnic Population with Age and Sex Detail, 1970-2040, used for calculations of specific age groups and race/ethnic group populations.

### **Definitions**

Place of occurrence    The place where the event occurred (regardless of place of residence).

Place of residence    The place where a person lives or maintains legal residency. For live births and fetal deaths, the mother's residence is used.

#### Births

Childbearing age    Women 15 through 44 years of age.

**Live birth** The complete expulsion or extraction from its mother of a product of conception (irrespective of the duration of pregnancy) which, after such separation, breaths or shows any other evidence of life such as beating of the heart, pulsation of the umbilical cord, or definite movement of voluntary muscles, whether or not the umbilical cord has been cut or the placenta is attached. This definition was promulgated by the World Health Organization in 1950, and is set forth in the California Administrative Code, Title 17, Chapter 1, Article 3. If the fetus is 20 weeks or more gestational age, the death must be registered with the local registrar.

**Low birth weight** A live birth or fetal death weighing less than 2,500 grams (5 pounds 8 ounces).

**Very low birth weight** A live birth or fetal death weighing less than 1,500 grams (3 pounds 5 ounces).

### Deaths

**Fetal death** A death prior to the complete expulsion or extraction from its mother of a product of conception (irrespective of the duration of pregnancy); the death is indicated by the fact that after such separation, the fetus does not breath or show any other evidence of life such as beating of the heart, pulsation of the umbilical cord, or definite movement of voluntary muscles. This definition was promulgated by the World Health Organization in 1950, and is set forth in the California Administrative Code, Title 17, Chapter 1, Article 3. If the fetus is 20 weeks or more gestational age, the death must be registered with the local registrar.

**Infant death** A death occurring in the first year of life.

**Maternal death** A death resulting from the complications of pregnancy, childbirth and the puerperium (Ninth Revision of International Classification of Disease codes 630-676).

**Neonatal death** A death occurring during the first 27 days of life.

**Postneonatal death** A death occurring between the 28<sup>th</sup> day and the end of the first year of life.

### **Rates and Ratios**

**Crude (Live) birth rate** 
$$= \frac{\text{Number of live births}}{\text{Estimated mid year population}} \times 1,000$$

**General fertility rate** 
$$= \frac{\text{Number of live births}}{\text{Estimated female population 15-44 years old}} \times 1,000$$

**Teen birth rate** 
$$= \frac{\text{Number of live births to mothers 15-19 years old}}{\text{Estimated female population 15-19 years old}} \times 1,000$$

**Low birth weight rate** 
$$= \frac{\text{Number of infants weighing less than 2,500 g at time of birth}}{\text{Total number of live births}} \times 1,000$$



$$\text{Very low birth weight rate} = \frac{\text{Number of infants weighing less than 1,500 g at time of birth}}{\text{Total number of live births}} \times 1,000$$

$$\text{Fetal death ratio} = \frac{\text{Number of reportable fetal deaths}}{\text{Total number of live births}} \times 1,000$$

$$\text{Infant mortality rate} = \frac{\text{Number of deaths under 1 year of age}}{\text{Total number of live births}} \times 1,000$$

$$\text{Neonatal mortality rate} = \frac{\text{Number of deaths under 28 days of age}}{\text{Total number of live births}} \times 1,000$$

$$\text{Post-neonatal mortality rate} = \frac{\text{Number of deaths 28 days of age to less than 1 year of age}}{\text{Total number of live births}} \times 1,000$$

$$\text{Maternal death rate} = \frac{\text{Number of deaths due to complications of pregnancy and childbirth}}{\text{Total number of live births}} \times 10,000$$